

*EUPTEROMALUS VIRIDESCENS* (HYMENOPTERA: PTEROMALIDAE),  
A NEW PARASITE ASSOCIATION FOR *PEDIوبيUS FOVEOLATUS*  
(HYMENOPTERA: EULOPHIDAE)  
AND *EPILACHNA VARIVESTIS* (COLEOPTERA:  
COCCINELLIDAE)<sup>1</sup>

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*Abstract.*—A native pteromalid, *Eupteromalus viridescens* (Walsh) was discovered while dissecting dead parasitized larvae (mummies) of the Mexican bean beetle (MBB), *Epilachna varivestis* Mulsant, in a study to investigate the parasite, *Pediobius foveolatus* (Crawford). Thirteen hundred twenty-nine of the 1757 MBB larvae that were field collected in Queen Anne and Wicomico Counties, Maryland, in 1977 and 1978, respectively, were parasitized. Nine mummies had *E. viridescens* associated with them, and 8 of these were in conjunction with adult *P. foveolatus*. This is a new host association for *E. viridescens* which appears in this instance to be a hyper-parasite.

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A native pteromalid, *Eupteromalus viridescens* (Walsh) was discovered while dissecting dead parasitized larvae (mummies) of the Mexican bean beetle (MBB), *Epilachna varivestis* Mulsant. Six hundred twenty-nine larvae were field collected on 28 and 30 September 1977 in Queen Anne County, Maryland; and 1128 larvae were field collected on 11 and 13 July 1978 in Wicomico County, Maryland. The collections were made from small soybean and snapbean test plots, 1977 and 1978, respectively, being used to investigate the MBB parasite, *Pediobius foveolatus* (Crawford). The larvae were brought to the laboratory on the above dates and held in individual containers until parasite emergence. At time of emergence each mummy was dissected for observation of parasite remains. Data recorded included number and sex ratio of emerged adult parasites, number and sex ratio of

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unemerged adult parasites, and stage at which development of pre-adult forms ceased.

Of the 1757 MBB larvae collected at the two sites, 1349 had parasites associated with them. Of the 1349 mummies, *E. viridescens* was determined to be present in 9 cases. In one case, no parasites had emerged, but upon dissection of the mummy, 4 ♀ *E. viridescens* were discovered along with 8 ♀ and 1 ♂ *P. foveolatus*. In 6 cases both species of parasite emerged successfully from the same mummy: 8 ♀ *E. viridescens* and 4 ♀ *P. foveolatus*, 2 ♀ *E. viridescens* and 9 ♀ *P. foveolatus*, 1 ♀ *E. viridescens* and 2 ♀ *P. foveolatus*, 1 ♂ *E. viridescens* and 6 ♀ *P. foveolatus*, 1 ♂ *E. viridescens* and 8 ♀ *P. foveolatus*, and 1 ♂ *E. viridescens* and 1 ♀ *P. foveolatus*. In another case 15 ♀ *E. viridescens* emerged and upon dissection 2 ♀ *P. foveolatus* were found. In the last case 3 ♂ *E. viridescens* had emerged. In all instances dissection yielded parasite pupal remains. *Pediobius foveolatus* pupal remains are characteristically dark brown black in color. Since light brown pupal remains were found in all mummies associated with *E. viridescens*, either alone or in conjunction with *P. foveolatus* but never found in mummies associated with *P. foveolatus* alone, it is likely that this is characteristic of *E. viridescens*.

Peck (1963) references 44 host records for *E. viridescens*. One species in the order Coleoptera, *Hypera postica* (Gyll.), is listed, although the majority of those mentioned are lepidopterans associated with parasites in the Ichneumonoidea. *Pediobius foveolatus*, a eulophid, and *E. varivestis*, a coccinellid, are not among those given, making this occurrence a new host association for *E. viridescens*.

In addition to references cited in Peck (1963), others have identified *E. viridescens* as a hyperparasite in association with *Bathyplectes curculionis* (Thompson) and *Hypera postica* (Puttler, 1966; Pike and Burkhardt, 1974). Harcourt (1960) cites *E. viridescens* as being reared from *Plutella maculipennis* (= *xylostella*) cocoons and attacking the prepupa and pupa of *Horogenes insularis* (Cress.). The existing relationship between this pteromalid and *Spodoptera frugiperda* when parasitized by *Apanteles marginiventris* (Cress.) indicates parasitization of the primary parasite by *E. viridescens* to be as high as 75% (Hofmaster and Greenwood, 1949). *Apanteles congregatus* (Say), commonly identified as a primary parasite of *Protoparce* (= *Manduca*) spp., also claims *E. viridescens* as a secondary parasite with one adult emerging from every host cocoon (Gilmore, 1938). Furthermore, of the non-parasitic species listed as hosts for *E. viridescens* in Peck (1963), most are recorded in Peck (1951) as hosts for at least one parasitic species found on the former list. Thus in this same vein, it is likely that *E. viridescens* acts as a hyperparasite in its relationship with *P. foveolatus* and *E. varivestis*.

*Eupteromalus viridescens* was identified to genus by Drs. P. M. Marsh and C. F. W. Meusebeck. Dr. E. E. Grissell made the species determination. All three scientists are with the Systematic Entomology Laboratory, USDA.

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